IN THE CLAIMS

Please amend the claims as follows:

1.   (Withdrawn) A method, comprising:

recording data related to a status of a prescribed cardiac resynchronization therapy (CRT) in a cardiac rhythm management (CRM) device;

processing the data into trended data useful for assessing the status of the prescribed CRT; and

presenting the trended data for use to assess the status of the prescribed CRT.

2.   (Withdrawn) The method of claim 1, wherein recording data related to a status of a prescribed CRT in a CRM device includes recording realized CRT data.

3.   (Withdrawn) The method of claim 2, wherein recording realized CRT data includes recording a value corresponding to CRT delivery, the value being at least one from the group consisting of a percentage value and an absolute value.

4.   (Withdrawn) The method of claim 2, wherein recording realized CRT data includes recording a value corresponding to ventricular pacing, the value being at least one from the group consisting of a percentage value and an absolute value, the ventricular pacing being at least one from a group consisting of right ventricular pacing (RV PACE) and left ventricular pacing (LV PACE).

5.   (Withdrawn) The method of claim 2, wherein recording realized CRT data includes recording a value corresponding to atrial tachycardia (AT), the value being at least one from the group consisting of a percentage value and an absolute value.

6.   (Withdrawn) The method of claim 2, wherein recording realized CRT data includes recording a value corresponding to capture, the value being at least one value from the group of values consisting of a percentage value and an absolute value.

7.   (Withdrawn) The method of claim 2, wherein recording realized CRT data includes recording a value corresponding to a value above a programmed rate, the value being at least one from the group consisting of a percentage value and an absolute value, the programmed rate being at least one from the group consisting of a programmed maximum tracking rate (MTR), a programmed maximum sensing rate (MSR), and a programmed maximum pacing rate (MPR).

8.   (Withdrawn) The method of claim 2, wherein recording realized CRT data includes recording a value corresponding to a mode of operation, the value being at least one from the group consisting of a percentage value and an absolute value, the mode being at least one from the group consisting of a tracking mode (TT) of operation and a non-tracking mode (TN) of operation.

9.   (Withdrawn) The method of claim 2, wherein recording realized CRT data includes recording a value corresponding to a CRT delivery results, the value being at least one from the group consisting of a percentage value and an absolute value, the CRT delivery results being at least one from the group consisting of CRT therapy that was successfully delivered (TTCRT) and CRT therapy that was not successfully delivered (TNCRT).

10.   (Withdrawn) The method of claim 1, wherein recording data related to a status of a prescribed CRT in a CRM device includes recording prescribed CRT data corresponding to programmed CRT-related parameters.

11.   (Withdrawn) The method of claim 1, wherein recording data related to a status of a prescribed CRT in a CRM device includes recording a CRM device operating mode.

12.   (Withdrawn) The method of claim 11, wherein recording a CRM device operating mode includes recording data to permit association between recorded data and a pacing mode of the CRM device when the data is recorded.

13.   (Withdrawn) The method of claim 1, wherein recording data related to a status of a prescribed CRT in a CRM device includes recording other CRM device data capable of affecting the status of the prescribed CRT in the CRM device.

14.   (Withdrawn) The method of claim 1, wherein recording data related to a status of a prescribed CRT in a CRM device includes recording a time associated with recording at least one of realized CRT data, prescribed CRT data, and a CRM device operating mode.

15.   (Withdrawn) The method of claim 1, wherein processing the data into trended data useful for assessing the status of the prescribed CRT includes processing the trended data for displaying a representation of the trended data.

16.   (Withdrawn) The method of claim 1, wherein processing the data into trended data useful for assessing the status of the prescribed CRT includes executing an algorithm on the data to assist with assessing the status of the CRT.

17.   (Withdrawn) The method of claim 1, further comprising using the status of the prescribed CRT to assist with determining an adjustment to improve the prescribed CRT.

18.   (Withdrawn) The method of claim 17, wherein presenting the trended data for use to assess the status of the prescribed CRT includes displaying graphs of the trended data.

19.   (Withdrawn) The method of claim 17, wherein presenting the trended data for use to assess the status of the prescribed CRT includes displaying a table containing the trended data.

20.   (Withdrawn) The method of claim 17, wherein presenting the trended data for use to assess the status of the prescribed CRT includes providing an alert corresponding to the status of the prescribed CRT.

21.   (Withdrawn) The method of claim 1, wherein the status of the prescribed CRT includes a chronic, ambulatory status.

22.   (Withdrawn) The method of claim 1, further comprising initiating a trigger, wherein data related to the status of the prescribed CRT in the CRM device is recorded after initiating the trigger.

23.   (Withdrawn) The method of claim 1, wherein processing the data into trended data includes trending N samples per unit time.

24.   (Withdrawn) The method of claim 1, wherein processing the data into trended data includes trending N samples per unit time until a predetermined change occurs in delivered CRT, and then trending M samples per unit time.

25.   (Withdrawn) The method of claim 1, wherein processing the data into trended data includes trending N samples per unit time until a predetermined threshold is reached related to delivered CRT, and then trending M samples per unit time.

26.   (Withdrawn) The method of claim 1, wherein processing the data into trended data includes trending N samples per unit time until a predetermined event occurs, and then trending M samples per unit time.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111   Page 9
Serial Number: 10/730,760   Dkt: 279.663US1
Filing Date: December 8, 2003
Title: TRENDED MEASUREMENT OF CARDIAC RESYNCHRONIZATION THERAPY

27.   (Withdrawn) The method of claim 1, wherein processing the data into trended data includes trending M samples per unit time after initiation of a trigger selected from a group consisting of: a predetermined change in delivered CRT, a predetermined threshold related to delivered CRT, and a predetermined event.

28.   (Withdrawn) The method of claim 1, wherein processing the data into trended data includes:

        trending a first parameter before a trigger selected from a group consisting of a predetermined change in delivered CRT, a predetermined threshold related to delivered CRT, and a predetermined event; and

        trending a second parameter after the trigger.

29.   (Currently Amended) An implantable cardiac rhythm management (CRM) device, comprising:

        a plurality of interface channels adapted to interface with a plurality of electrodes on at least one lead, wherein the plurality of interface channels are adapted to deliver pacing pulses to at least one of the plurality of electrodes and to receive sensed cardiac signals from at least one of the plurality of electrodes as part of a prescribed cardiac resynchronization therapy (CRT);

        a memory embedded with computer instructions;

        a controller adapted to communicate with the plurality of interface channels and with the memory, the controller adapted to control delivery of the pacing pulses, to process the sensed signals, and to record CRT-related data relevant to a status of the prescribed CRT to the memory; and

        a communication circuit adapted to transmit the CRT-related data to an external device for presentation of data trends useful to assess the status of the prescribed CRT, wherein the data trends include at least one CRT-related data parameter associated with time.

30.   (Original) The device of claim 29, wherein the data relevant to a status of the prescribed CRT includes a chronic, ambulatory data.

31.   (Original) The device of claim 29, wherein the plurality of interface channels include:

a right ventricle (RV) interface channel for use in sensing and pacing a right ventricle of a heart;

a left ventricle (LV) interface channel for use in sensing and pacing a left ventricle of a heart; and

a right atrium (RA) interface channel for use in sensing and pacing an atrium of the heart.

32.   (Original) The device of claim 29, wherein the controller is adapted to record prescribed CRT data and time information in the memory.

33.   (Original) The device of claim 29, wherein the controller is adapted to record realized CRT data and time information in the memory.

34.   (Original) The device of claim 29, wherein the controller is adapted to record a pacing mode and time information in the memory.

35.   (Original) The device of claim 34, wherein the controller is adapted to record when the device is operating in an atrial tracking mode to the memory.

36.   (Original) The device of claim 29, wherein the controller is adapted to trend samples of CRT-related data relevant to the status of the prescribed CRT to the memory, including to trend N samples per unit time.

37.   (Original) The device of claim 29, wherein the controller is adapted to trend samples of CRT-related data relevant to the status of the prescribed CRT to the memory, including to trend N samples per unit time until a predetermined change occurs in delivered CRT, and then trend M samples per unit time.

38.   (Original) The device of claim 29, wherein the controller is adapted to trend samples of CRT-related data relevant to the status of the prescribed CRT to the memory, including to trend

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 10/730,760
Filing Date: December 8, 2003
Title: TRENDED MEASUREMENT OF CARDIAC RESYNCHRONIZATION THERAPY

Page 11
Dkt: 279.663US1

N samples per unit time until a predetermined threshold is reached related to delivered CRT, and then trend M samples per unit time.

39.   (Original) The device of claim 29, wherein the controller is adapted to trend samples of CRT-related data relevant to the status of the prescribed CRT to the memory, including to trend N samples per unit time until a predetermined event occurs, and then trend M samples per unit time.

40.   (Original) The device of claim 29, wherein the controller is adapted to trend samples of CRT-related data relevant to the status of the prescribed CRT to the memory, including to trend M samples per unit time after initiation of a trigger selected from a group consisting of: a predetermined change in delivered CRT, a predetermined threshold related to delivered CRT, and a predetermined event.

41.   (Original) The device of claim 29, wherein the controller is adapted to trend samples of CRT-related data relevant to the status of the prescribed CRT to the memory, including to trend a first parameter before a trigger selected from a group consisting of a predetermined change in delivered CRT, a predetermined threshold related to delivered CRT, and a predetermined event, and to trend a second parameter after the trigger.

42.   (Original) The device of claim 41, wherein the CRT-related data includes a value corresponding to CRT delivery, the value being at least one from the group consisting of a percentage value and an absolute value.

43.   (Original) The device of claim 41, wherein the CRT-related data includes a value corresponding to ventricular pacing, the value being at least one from the group consisting of a percentage value and an absolute value, the ventricular pacing being at least one from a group consisting of right ventricular pacing (RV PACE) and left ventricular pacing (LV PACE).

44.   (Original) The device of claim 41, wherein the CRT-related data includes a value corresponding to atrial tachycardia (AT), the value being at least one from the group consisting of a percentage value and an absolute value.

45.   (Original) The device of claim 41, wherein the CRT-related data includes a value corresponding to capture, the value being at least one value from the group of values consisting of a percentage value and an absolute value.

46.   (Original) The device of claim 41, wherein the CRT-related data includes a value corresponding to a value above a programmed rate, the value being at least one from the group consisting of a percentage value and an absolute value, the programmed rate being at least one from the group consisting of a programmed maximum tracking rate (MTR), a programmed maximum sensing rate (MSR), and a programmed maximum pacing rate (MPR).

47.   (Original) The device of claim 41, wherein the CRT-related data includes a value corresponding to a mode of operation, the value being at least one from the group consisting of a percentage value and an absolute value, the mode being at least one from the group consisting of a tracking mode (TT) of operation and a non-tracking mode (TN) of operation.

48.   (Original) The device of claim 41, wherein the CRT-related data includes a value corresponding to a CRT delivery results, the value being at least one from the group consisting of a percentage value and an absolute value, the CRT delivery results being at least one from the group consisting of CRT therapy that was successfully delivered (TTCRT) and CRT therapy that was not successfully delivered (TNCRT).

49.   (Currently Amended) A system, comprising:

        an implantable cardiac rhythm (CRM) device adapted to perform a prescribed cardiac resynchronization therapy (CRT), the CRM device including:

                a set of interface channels adapted to provide [[a]] the prescribed cardiac

                        resynchronization therapy (CRT), wherein at least one of the channels is

adapted to deliver pacing pulses to at least one of a plurality of electrodes

and at least one of the channels is adapted to receive sensed cardiac

signals from at least one of the plurality of electrodes;

a memory embedded with controller instructions;

a controller adapted to communicate with the set of interface channels and the

memory, the controller adapted to execute the controller instructions to

control delivery of the pacing pulses, to process sensed cardiac signals,

and to record CRT-related data relevant to a status of the prescribed CRT

to the memory of the CRM device; and

a communication circuit adapted to communicate with the controller and to

transmit and receive wireless communication signals; and

a programmer adapted to program the CRM device to provide the prescribed CRT, the

programmer including:

a memory embedded with controller instructions;

a controller adapted to communicate with the memory and execute the controller

instructions;

a communication circuit adapted to communicate with the controller and to

transmit and receive wireless communication signals such that the

programmer is capable of wirelessly communicating with the CRM

device, and such that the CRT-related data is communicated from the

memory of the CRM device to the memory of the programmer; and

a monitor adapted to communicate with the controller, wherein at least one of the

programmer and the CRM device is adapted to trend the CRT-related data,

the monitor being adapted to display information corresponding to the

trended CRT-related data samples indicative of the status of the prescribed

CRT, wherein the trended CRT-related data include at least one CRT-

related data parameter associated with time.

50.   (Original) The system of claim 49, wherein the status of the prescribed CRT includes a

chronic, ambulatory status.

51.   (Original) The system of claim 49, wherein the memory of the CRM device includes controller instructions to be executed by the controller of the CRM device to trend the data samples.

52.   (Original) The system of claim 49, wherein the memory of the programmer includes controller instructions to be executed by the controller of the programmer to trend the data samples.

53.   (Original) The system of claim 49, wherein the information displayed on the monitor includes at least one of:

        a graph of the trended data samples;

        a table containing the trended data samples; and

        an alert corresponding to the status of the prescribed CRT.

54.   (Currently Amended) A system, comprising:

        an implantable cardiac rhythm (CRM) device <u>adapted</u> to perform a prescribed cardiac resynchronization therapy (CRT), the CRM device including:

            means for delivering pacing pulses to at least one of a plurality of electrodes;

            means for receiving sensed cardiac signals from at least one of the plurality of electrodes;

            means for controlling delivery of the pacing pulses and processing the sensed cardiac signals to perform the prescribed CRT;

            means for recording CRT-related data corresponding to a status of the prescribed CRT; and

            means ~~to transmit~~ <u>for transmitting</u> and ~~receive~~ <u>receiving</u> wireless communication signals; and

        a programmer <u>adapted</u> to program the CRM device to provide the prescribed CRT<u>, wherein at least one of the programmer and the CRM device is adapted to trend the CRT-related data</u>, the programmer including:

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111   Page 15
Serial Number: 10/730,760   Dkt: 279.663US1
Filing Date: December 8, 2003
Title: TRENDED MEASUREMENT OF CARDIAC RESYNCHRONIZATION THERAPY

means ~~to transmit~~ <u>for transmitting</u> and ~~receive~~ <u>receiving</u> wireless communication

signals such that the programmer is capable of wirelessly communicating

with the CRM device; and

means ~~to display~~ <u>for displaying</u> information corresponding to <u>the</u> trended <u>CRT-</u>

<u>related</u> data indicative of the status of the prescribed CRT<u>, wherein the</u>

<u>trended CRT-related data include at least one CRT-related data parameter</u>

<u>associated with time</u>.

55.   (Original) The system of claim 54, wherein the status of the prescribed CRT includes a chronic, ambulatory status of the prescribed CRT.

56.   (Currently Amended) The system of claim 54, wherein the means ~~to display~~ <u>for</u> <u>displaying</u> information includes a graph of the trended data.

57.   (Currently Amended) The system of claim 54, wherein the means ~~to display~~ <u>for</u> <u>displaying</u> information includes a table of the trended data.

58.   (Original) The system of claim 54, wherein the CRT-related data includes prescribed CRT data.

59.   (Original) The system of claim 54, wherein the CRT-related data includes realized CRT data.

60.   (Currently Amended) The system of claim 54, wherein the CRM device further includes means ~~to detect~~ <u>for detecting</u> a trigger, and means ~~to trend~~ <u>for trending</u> data samples based on the trigger.